

REMARKS

Initially, Applicant would like to express his appreciation to the Examiner for the detailed Official Action provided.

Claims 1-7 are currently pending. Applicant respectfully requests reconsideration of the outstanding rejections, and allowance of all the claims pending in the present application.

On page 2 of the Official Action, claim 3 was rejected under 35 U.S.C. § 112, second paragraph. Applicant respectfully traverses this rejection.

The Examiner has stated that "claim 3 fails to conform with present US practice with respect to product by process claim(s) (format), i.e. the independent claim should be a process, and then the dependent claim is a product made by the above independent claim process, not the other way around as presented herein."

Applicant respectfully submits that the unduly limiting position taken by the Examiner with regard to product-by-process claims finds no support in U.S. patent law or practice. ✓ While the format described by the Examiner (i.e., an independent claim to a process, followed by a dependent claim to a product made by the process of the independent claim) is perhaps the most common format for product-by-process claims, *it is by no means the exclusive format therefor*. Applicant submits that product-by-process claims can take many forms, such as an independent product claim (i.e., "A product made by the process of . . ."), or a dependent product claim (i.e., "The product according to claim 1, made by the process

of . . ."). Applicant notes that claim 3 of the present application is drafted in the latter format, as a dependent product claim with a product-by-process limitation.

Accordingly, the Examiner is respectfully requested to indicate where any support can be found in the U.S. patent laws (35 U.S.C.), patent rules (37CFR), M.P.E.P. or case law for his stated position that the *only* proper format for product-by-process claims in "present US practice" is that of an independent claim to a process, followed by a dependent claim to a product made by the process of the independent claim. Lacking any such support, Applicant

→ submits that claim 3 is drafted in a proper and acceptable product-by-process format. ✓

Accordingly, Applicant submits that claim 3 properly sets forth a product-by-process limitation, and is directed to subject matter which Applicant regards as his invention. Note MPEP 2113 and 2173.05(p). Applicant submits that only structural features of the product (i.e., the lens) are claimed, not process or manufacturing steps, and that this is a proper dependent claim. Accordingly, Applicant respectfully submits that the rejection of claim 3 under 35 U.S.C. § 112, second paragraph, is improper, and requests that it be withdrawn.

On page 3 of the Official Action, claims 1 and 4-7 were rejected under 35 U.S.C. § 102(e) as being anticipated by, or under 35 U.S.C. § 103(a) as being obvious over, KIRIKI et al. (U.S. Patent No. 6,349,083).

Applicant respectfully traverses the rejections of claims 1 and 4-7 under 35 U.S.C. § 102(e) and § 103(a) based on KIRIKI et al.

Applicant notes that each of the claims recites an objective lens which comprises a *single glass plano-convex lens*. Applicant submits that KIRIKI et al. lacks any disclosure of such a *single glass plano-convex lens*.

As an initial matter, Applicant notes that the lenses disclosed in KIRIKI et al. are plastic rather than *glass* as recited in each of the claims (note, for example, KIRIKI et al. column 1, line 56-60). The specification of the present application discusses the benefits of providing such *glass* lenses, such as at page 3, line 15 through page 4, line 18. Applicant further notes that the Examiner has failed to address this deficiency in the teachings of KIRIKI et al. Accordingly, Applicant submits that the rejections under 35 U.S.C. § 102(e) and § 103(a) based on KIRIKI et al. should be withdrawn for at least this reason.

Applicant further notes that KIRIKI et al. discloses two different types of systems. The first is a near field type system as shown in Fig. 17 and discussed at column 6, line 20 through column 7, line 25. The second is an optical information recording medium system as shown in Fig. 19 and discussed at column 8, line 55 through column 10, line 10. The objective lens 15 of the near field type system as shown in Figs. 17, 18(a) and 18(b) can be characterized as a *single plano-convex lens*. However, the objective lens 160 of the optical information recording medium system as shown in Figs. 19, 20(a) and 20(b) can not be characterized as a *single plano-convex lens* since it does not include a planar surface.

Applicant further notes that Examples 1-4 of the near field type system objective lens are discussed at column 13, line 11 through column 14, line 65, and Examples 5 and 6 of the optical information recording medium system objective lens are discussed at column 15, line 15 through column 17, line 30. As shown in Figs. 1, 4, 7 and 10, the near field type objective lenses 15 of Examples 1-4, which are *plano-convex*, converge light *at the rear planar surface of the lens*. In contrast, as shown in Figs. 13, 15 and 19, the optical information recording medium objective lenses 160 of Examples 5 and 6, which are not *plano-convex*, converge light *onto the recording layer* 220 of optical disk 200. Accordingly, Applicant submits that no single disclosed embodiment of KIRIKI et al. includes a *single plano-convex objective lens that converges a light beam onto a recording layer of an optical medium*, nor would the provision of such in the system of KIRIKI et al. have been obvious to one of ordinary skill in the art.

Applicant further notes that claim 5 also recites *a magnetic coil for applying a magnetic field to an optical medium*, such a magnetic coil being arranged on a flat surface of the objective lens. Applicant submits that KIRIKI et al. lacks any disclosure of such a magnetic coil, much less such a magnetic coil that is *arranged on a flat surface of an objective lens*.

Applicant submits that the Examiner has provided no support for the position that *a magnetic coil for applying a magnetic field to the optical medium* is inherent in the system

of KIRIKI et al., much less for the position that such a magnetic coil that is *arranged on a flat surface of an objective lens* is inherent in the system of KIRIKI et al. Applicant respectfully submits that a magnetic coil as recited in claim 5 is neither disclosed nor inherent in the system of KIRIKI et al.

Applicant further challenges the Official notice taken by the Examiner with regard to the use of magnetic coils in MO systems. Accordingly, the Examiner is requested to provide support in the form of a prior art reference or teaching for his position that *a magnetic coil for applying a magnetic field to the optical medium* is known in MO systems. The Examiner is further requested to provide support in the form of a prior art reference or teaching for his position that *a magnetic coil arranged on a flat surface of an objective lens* is known in MO systems.

Applicant further submits that even if the use of a magnetic coil for applying a magnetic field to the optical medium in MO systems is known, it nevertheless would not have been obvious to one of ordinary skill in the art to provide such a magnetic coil in the system of KIRIKI et al., much less to provide such a magnetic coil *arranged on a flat surface of an objective lens* in the system of KIRIKI et al. Applicant submits that any such modification suggested by the Examiner is clearly the result of impermissible hindsight reasoning based upon the teachings of the present application, rather than being based upon what the teachings of the prior art would fairly suggest to one of ordinary skill in the art.

Applicant also submits that dependent claims 4, 6 and 7, which are at least patentable due to their respective dependencies from claims 1 and 5 for the reasons noted above, recite additional features of the invention and are also separately patentable over the prior art of record. For example, Applicant submits that there is no disclosure in KIRIKI et al. that the wavefront aberration of the objective lens is less than  $0.07 \lambda$  rms, nor would the design or provision of such have been a matter of obvious optimization as suggested by the Examiner. Further, although the objective lens 160 shown in Figs. 19 appears to include an outer flange, as pointed out above, such lens 160 is not a *single plano-convex* lens.

Applicant respectfully submits that the rejections of claims 1 and 4-7 under 35 U.S.C. § 102(e) and § 103(a) based on KIRIKI et al. are improper at least for each and certainly for all of the above-noted reasons. Accordingly, Applicant respectfully requests reconsideration and withdrawal of these rejections, and an early indication of the allowance of these claims.

On page 4 of the Official Action, claims 2 and 3 were rejected under 35 U.S.C. § 103(a) as being obvious over KIRIKI et al. (U.S. Patent No. 6,349,083).

Applicant respectfully traverses the rejection of claims 2 and 3 under 35 U.S.C. § 103(a) based on KIRIKI et al.

As an initial matter, Applicant notes that these claims each include the subject matter of independent claim 1, which is neither anticipated by, nor obvious over, the teachings of KIRIKI et al. for the reasons noted above. Applicant submits that dependent claims 2 and

3, which are at least patentable due to their dependency from claim 1 for the reasons noted above, recite additional features of the invention and are also separately patentable over the prior art of record.

As noted above, the lenses disclosed in KIRIKI et al. are plastic rather than *glass*. Accordingly, Applicant submits that it would not have been obvious to one of ordinary skill in the art to provide the *plastic lens* of KIRIKI et al. with a refractive index of 1.6 (claim 2) or as produced by glass molding (claim 3). Providing such features in a *plastic lens* would clearly require more than a mere optimization, and would instead constitute a total change in the material of the lens. Further, although Applicant does not disagree with the Examiner's statement that glass lenses are well known, the Examiner has provided no support or statement as to why one of ordinary skill in the art would have been motivated to provide the lenses of KIRIKI et al. as *glass* rather than plastic. Applicant submits that any such modification suggested by the Examiner is clearly the result of impermissible hindsight reasoning based upon the teachings of the present application, rather than being based upon what the teachings of the prior art would fairly suggest to one of ordinary skill in the art.

Applicant respectfully submits that the rejection of claims 2 and 3 under 35 U.S.C. § 103(a) is improper at least for each and certainly for all of the above-noted reasons. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection, and an early indication of the allowance of these claims.

On page 4 of the Official Action, claims 1, 2 and 3 were rejected under 35 U.S.C. § 103(a) as being obvious over SUDA et al. (U.S. Patent No. 4,657,352) in view of KASHIWAGI et al. (U.S. Patent No. 6,353,592).

Applicant respectfully traverses the rejection of claims 1, 2 and 3 under 35 U.S.C. § 103(a) based on SUDA et al. in view of KASHIWAGI et al.

Applicant notes that each of the claims recites an objective lens which comprises a *single glass plano-convex lens which is configured to maintain a numerical aperture of at least 0.7*. As acknowledged by the Examiner, SUDA et al. lacks any disclosure of an objective lens *having an NA of at least 0.7*.

As also noted by the Examiner, KASHIWAGI et al. discloses an objective lens having a higher NA. However, KASHIWAGI et al. only teaches achieving a high NA by providing a *two element objective lens 31, 32* (note Fig. 24; column 19, lines 11-26), rather than a *single element objective lens*. Applicant submits that KASHIWAGI et al. fails to provide any teaching of providing a *single element objective lens having an NA of at least 0.7*.

As discussed on page 2 of the present application, such multi-lens systems may achieve an operable NA, however there are inherent problems related to alignment, space requirements and fine actuator capabilities, which are not present with a single lens system. The present invention achieves the desired NA by providing a *single glass plano-convex objective lens*, thus avoiding the problems of such multi-lens systems.

Accordingly, Applicant submits that one of ordinary skill in the art would not have been motivated, nor enabled, to configure a single lens such as that disclosed in SUDA et al., as having *an NA of at least 0.7*, based upon the teachings of KASHIWAGI et al. Applicant submits that any such modification suggested by the Examiner is clearly the result of impermissible hindsight reasoning based upon the teachings of the present application, rather than being based upon what the teachings of the prior art would fairly suggest to one of ordinary skill in the art.

Applicant also submits that dependent claims 2 and 3, which are at least patentable due to their dependency from claim 1 for the reasons noted above, recite additional features of the invention and are also separately patentable over the prior art of record.

Applicant respectfully submits that the rejection of claims 1, 2 and 3 under 35 U.S.C. § 103(a) is improper at least for each and certainly for all of the above-noted reasons. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection, and an early indication of the allowance of these claims.

SUMMARY AND CONCLUSION

Reconsideration of the outstanding Official Action, and allowance of the present application and all of the claims therein are respectfully requested and now believed to be appropriate.

Applicant has made a sincere effort to place the present application in condition for allowance and believes that he has now done so.

Should there be any questions or comments, the Examiner is invited to contact the undersigned at the below-listed telephone number.

Respectfully submitted,  
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